

What is claimed is:

1. A wheel chair comprising:
  - a gas motor adapted to propel the wheel chair;
  - an electric motor adapted to propel the wheel chair;
  - a battery connected to the electric motor for supplying electrical power to the electric motor; and
  - an alternator coupled to the gas motor, wherein during operation of the gas motor, the gas motor drives the alternator for causing the alternator to generate electricity, wherein the alternator is coupled to the battery for supplying the generated electricity thereto for charging the battery.
2. The wheel chair of claim 1, wherein the gas motor is a diesel motor or a propane-powered motor.
3. The wheel chair of claim 1, and further comprising a hydraulic device coupled to the gas motor and the electric motor to be driven by at least one of the gas motor and the electric motor, wherein the hydraulic device is coupled to a drive wheel of the wheel chair for driving the drive wheel.
4. The wheel chair of claim 3, wherein the hydraulic device comprises:
  - a hydraulic pump coupled to the gas motor and the electric motor; and
  - a hydraulic motor fluidly coupled to the hydraulic pump and coupled to the drive wheel for providing torque to the drive wheel.
5. The wheel chair of claim 4, wherein the hydraulic pump and the electric motor are mounted on a modular unit that is removably attached to the wheel chair.

6. The wheel chair of claim 4, wherein the hydraulic device further comprises a transducer coupled between the hydraulic pump and hydraulic motor.

7. The wheel chair of claim 3, and further comprising a track system connected to the drive wheel.

8. The wheel chair of claim 3, and further comprising a controller coupled to the hydraulic device.

9. The wheel chair of claim 8, and further comprising an input device coupled to the controller.

10. The wheel chair of claim 9, wherein the input device is wirelessly coupled to the controller.

11. The wheel chair of claim 1, and further comprising a track system adapted to propel the chair and adapted to be powered by at least one of the gas motor and the electric motor.

12. The wheel chair of claim 1, wherein the electric motor is adapted to start the gas motor.

13. The wheel chair of claim 1, wherein the electric motor and the alternator are contained in a single unit.

14. The wheel chair of claim 1, wherein the electric motor is adapted to assist the gas motor.

15. A wheel chair comprising:

first and second track assemblies respectively disposed on first and second sides of the wheel chair, each of the first and second track assemblies comprising:

a first wheel;

a second wheel;

a track disposed around the first and second wheels, interconnecting the first and second wheels;

a first bogie wheel disposed between the first and second wheels, the first bogie wheel biased in a downward position and configured to travel in an upward direction when an upward force is applied thereto; and

second and third bogie wheels disposed between the second wheel and the first bogie wheel, the second and third bogie wheels disposed on opposite ends of a support member pivotally attached to each of the first and second track assemblies, wherein the support member is biased at a center position and is configured to pivot when a force is applied to one or both of the second and third bogie wheels; and

a prime mover adapted to propel at least one of the first and second wheels and thus the track.

16. The wheel chair of claim 15, wherein the prime mover comprises a first motor coupled to a hydraulic device that is coupled to at least one of the first and second wheels, wherein the motor is adapted to drive the hydraulic device and the hydraulic device is adapted to supply a torque to at least one of the first and second wheels.

17. The wheel chair of claim 16, wherein the first motor comprises at least one of a gas motor and an electric motor.

18. The wheel chair of claim 17, wherein the first motor further comprises an alternator that is drivable by the gas motor for charging a battery of the wheel chair, the battery for supplying power to the electric motor.

19. The wheel chair of claim 15, and further comprising a controller having an input device coupled thereto, the controller further coupled to the prime mover to control the prime mover.

20. A self-propelled device comprising:

first and second track assemblies respectively disposed on first and second sides of the self-propelled device, each of the first and second track assemblies comprising:

a side frame having a first section disposed between second and third sections, wherein the second and third sections are pivotally attached to the first section;

a first wheel rotatably attached to the second section of the side frame;

a second wheel rotatably attached to the third section of the side frame; and

a track disposed around the first and second wheels, interconnecting the first and second wheels;

first and second actuators respectively connected to the second and third sections of the side frame for selectively pivoting the second and third sections of the side frame; and

a prime mover adapted to propel at least one of the first and second wheels and thus the track.

21. The self-propelled device of claim 20, wherein the prime mover comprises a first motor coupled to a hydraulic device that is coupled to at least one of the first and second wheels, wherein the motor is adapted to drive the hydraulic device and the hydraulic device is adapted to supply a torque to at least one of the first and second wheels.

22. The self-propelled device of claim 21, wherein the first motor comprises at least one of a gas motor and an electric motor.

23. The self-propelled device of claim 22, wherein the first motor further comprises an alternator that is drivable by the gas motor for charging a battery of the wheel chair, the battery for supplying power to the electric motor.

24. The self-propelled device of claim 20, and further comprising a controller having an input device coupled thereto, the controller coupled to the prime mover to control the prime mover.

25. The self-propelled device of claim 24, wherein the first and second actuators are connected to at least one of the input device and the controller.

26. The self-propelled device of claim 20, and further comprising a first bogie wheel disposed between the first and second wheels, the first bogie wheel biased in a downward position and configured to travel in an upward direction when an upward force is applied thereto.

27. The self-propelled device of claim 26, and further comprising second and third bogie wheels disposed between the second wheel and the first bogie wheel, the second and third bogie wheels disposed on opposite ends of a support member pivotally attached to the side frame, wherein the support member is biased at a center position and is configured to pivot when a force is applied to one or both of the second and third bogie wheels.

28. The self-propelled device of claim 20, wherein the first and second actuators are electrically powered.

29. The self-propelled device of claim 20, and further comprising a mechanism for determining an angular location of a respective one of the second and third sections.

30. A self-propelled device comprising:

first and second track assemblies respectively disposed on first and second sides of the self-propelled device, each of the first and second track assemblies comprising:

a side frame having a first section disposed between second and third sections, wherein the second and third sections are pivotally attached to the first section

a drive wheel rotatably attached to the second section of the side frame;

a free wheel rotatably attached to the third section of the side frame;  
and

a track disposed around the drive wheel and the free wheel,  
interconnecting the drive wheel and the free wheel;

first and second actuators respectively connected to the second and third  
sections of the side frame for selectively pivoting the second and third sections of  
the side frame;

a prime mover adapted to propel the drive wheel and thus the track;

a mechanism for determining the angular location of a respective one of the  
second and third sections;

a controller coupled to the prime mover and the actuators; and

an input device coupled to the controller.

31. The self-propelled device of claim 30, wherein the mechanism comprises  
optical sensors.

32. The self-propelled device of claim 30, wherein the mechanism comprises:

a first sensor for detecting when a respective one of the second and third  
sections is in a neutral position;

a second sensor for detecting when a respective one of the second and third  
sections is pivoted fully downward; and

a third sensor for detecting when a respective one of the second and third  
sections is pivoted fully upward.

33. The self-propelled device of claim 30, wherein the mechanism comprises a  
stepper motor.

34. The self-propelled device of claim 30, wherein the mechanism is electrically coupled to the controller.

35. A method for operating a wheel chair, the method comprising:

driving the wheel chair using a gas motor of the wheel chair during a first condition;

driving an alternator of the wheel chair using the gas motor for causing the alternator to generate electricity;

storing the generated electricity in a battery of the wheel chair; and

driving the wheel chair using an electric motor of the wheel chair during a second condition, wherein the electric motor receives electricity from the battery.

36. The method of claim 35, wherein the first condition comprises outdoor conditions and the second condition comprises indoor conditions, when the gas motor runs out of fuel, or when the gas motor needs assistance from the electric motor while the gas motor is running.

37. The method of claim 35, wherein driving the wheel chair using a gas motor comprises driving a hydraulic device using the gas motor, wherein the hydraulic device drives the wheel chair.

38. The method of claim 37, wherein driving the wheel chair using an electric motor comprises driving the hydraulic device using the electric motor.



39. The method of claim 35, wherein driving the wheel chair comprises driving a track system of the wheel chair.

40. A method for operating a self-propelled device, the method comprising:

to travel up a step, pivoting a first section of a track assembly of the self-propelled device upward to raise a first wheel rotatably attached to the first section and pivoting a second section of the track assembly downward to lower a second wheel rotatably attached to the second section, wherein a track is wrapped around the first and second wheels;

to travel down the step, pivoting the first section downward to lower the first wheel and pivoting the second section upward to raise the second wheel;

to travel over a substantially flat surface, maintaining the first and second sections at a neutral position; and

activating at least one of the first and second wheels for causing the track to move, whereby causing the self-propelled device to move up or down the step or over the substantially flat surface.

41. The method of claim 40, and further comprising pivoting a first bogie wheel disposed between the first and second wheels upward in response to the first bogie wheel encountering a top of the step when traveling up the step.

42. The method of claim 40, and further comprising returning a first bogie wheel disposed between the first and second wheels to a biased position when the first bogie wheel moves past a top of the step when traveling down the step.

43. The method of claim 40, and further comprising when traveling up the step, pivoting a support member of the track assembly in response to a first bogie wheel

connected to the support member encountering a top of the step, wherein pivoting the support member causes a second bogie wheel connected to the support member to maintain contact with a bottom of the step.

44. The method of claim 40, and further comprising when traveling down the step, pivoting a support member of the track assembly in response to a first bogie wheel connected to the support member moving past a top of the step while a first bogie wheel connected to the support member remains atop the step, wherein pivoting the support member causes the first bogie wheel to contact a bottom of the step.